

## PATENT ABSTRACTS OF JAPAN

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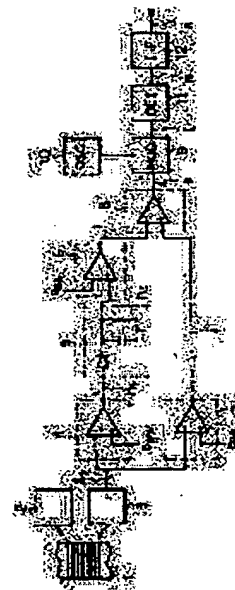
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### (54) BAR-CODE DETECTION CIRCUIT

#### (57)Abstract:

PURPOSE: To discriminate accurately white and black even if a bar-code plate is dirty and damaged, by operating and processing the photo detector output obtained by scanning optically the bar-code and difference between the white bar maximum level and the black bar minimum level.

CONSTITUTION: Bar-code plate 1 is scanned by light source 2 and photo detector 3, and in respect to the output of the photo detector, white level maximum value eWW and black level minimum value eBB are compared with each other by operational amplifiers 4 and 7, and their difference level is outputted. Output hS of amplifier 4 is subjected to envelope detection by rectifier 5, and signal hd is outputted and is inputted to operational amplifier 6. This signal is compared with inversion value eBB or difference between level eBB and eWW by amplifier 6, and difference output i is inputted to operational amplifier 8. Meanwhile, output j of amplifier 7 is inputted to amplifier 8 and is compared with signal i to output difference signal k. Signal k modulates the output of carrier frequency oscillator 10 by modulator 9, and output l is detected by differential envelope detector 11, and output m is converted to a square wave by square wave converter FF12, thus outputting binary code n.



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